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| 10/816,062 | 03/31/2004 | Hung-Chin Guthrie | HIT1P073/HSJ920040004US1 | 8877 |
| 28875 | 7590 | 09/12/2006 | EXAMINER | |
| Zilka-Kotab, PC P.O. BOX 721120 SAN JOSE, CA 95172-1120 | | | RENNER, CRAIG A | |
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| | | | 2627 | |

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/816,062

Applicant(s)

GUTHRIE ET AL.

Examiner

Craig A. Renner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 10-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>31 March 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of "group (I)" in the reply filed on 25 August 2006 is acknowledged. Accordingly, claims 10-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to one or more non-elected inventions/species, there being no allowable generic or linking claim.

Drawings

2. The drawings are objected to because of the following informalities:

a. The drawings fail to comply with 37 CFR 1.84(p)(5) because they include one or more reference signs not mentioned in the description. Note, for instance "4" (shown twice in FIG. 2, for instance).

b. In FIG. 1, reference sign "219" should be changed to --119-- in order to be consistent with the remainder of the disclosure.

c. In FIG. 6, left-most reference sign "308" should be drawn to the "dielectric material" in order to be consistent with the remainder of the disclosure.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) and/or an amendment to the specification in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing

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sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

4. The abstract of the disclosure is objected to because it is not "within the range of 50 to 150 words" and because it does not "include that which is new in the art to which the invention pertains", i.e., the elected invention should be included. Appropriate correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities:

- a. In line 7 on page 13, "electroplaiting" should be spelled --electroplating--.
- b. In line 5 of claim 1, "therebetween" should be changed to --therebetween;-- for better clarity.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Many elements in the claims are indefinite because they lack clear and/or positive antecedent basis including "said back gap" (lines 5, 7, 7-8 and 9 of claim 1, line 3 of claim 3, line 3 of claim 6, and lines 5, 9 and 13 of claim 7), "said write gap material layer" (lines 1-2 in each of claims 2 and 3), "said write gap" (lines 2-3 of claim 2), "said first material layer" (line 12 of claim 7), "said second material layer" (line 13 of claim 7), "said second back gap layer" (line 16 of claim 7), and "said non-magnetic write gap material" (lines 1-2 in each of claims 8 and 9).

b. In lines 1-3 of claim 2, it is indefinite as to how the "write gap material layer" can extend "less than half" the distance between the pedestal and the component in which the write gap material layer forms, i.e., the "write gap."

c. Claims 4 and 5 inherit the indefiniteness associated with base claims 1 and 2 and stand rejected as well.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Sasaki et al. (US 6,353,995).

Sasaki et al. (US 6,353,995) teaches a magnetic write head (FIG. 24A, for instance) comprising a first magnetic write pole (108a) having first and second ends; a magnetic pedestal (108b) formed over the first magnetic pole at the first end; a magnetic back gap layer (108c) formed over the first magnetic pole at the second end, the pedestal and the back gap having a distance therebetween (as shown in FIG. 24A, for instance); a non magnetic write gap material (114) formed over the pedestal, extending toward the back gap and having a termination between the pedestal and the back gap (as shown in FIG. 24A, for instance); and a magnetic layer (115c) formed over the back gap, extending toward the pedestal and terminating at the termination of the write gap material (as shown in FIG. 24A, for instance) [as per claim 1]; wherein the magnetic head further comprises a second magnetic pole (115a) extending from the

back gap layer to the pedestal (as shown in FIG. 24A, for instance), the second pole being magnetically connected with the back gap (as shown in FIG. 24A, for instance) and being separated from the pedestal by the write gap material (as shown in FIG. 24A, for instance) [as per claim 6].

10. Claims 1, 4 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Han et al. (US 2004/0080867).

Han et al. (US 2004/0090867) teaches a magnetic write head (FIG. 11, for instance) comprising a first magnetic write pole (13) having first and second ends; a magnetic pedestal (left-most 24) formed over the first magnetic pole at the first end; a magnetic back gap layer (right-most 24) formed over the first magnetic pole at the second end, the pedestal and the back gap having a distance therebetween (as shown in FIG. 11, for instance); a non magnetic write gap material (20) formed over the pedestal, extending toward the back gap and having a termination between the pedestal and the back gap (as shown in FIG. 11, for instance); and a magnetic layer (84) formed over the back gap, extending toward the pedestal and terminating at the termination of the write gap material (as shown in FIG. 11, for instance) [as per claim 1]; wherein the write gap material is Rh (lines 50-51 in column 2 on page 12, for instance) [as per claim 4]; and wherein the magnetic head further comprises a second magnetic pole (110 and/or 112) extending from the back gap layer to the pedestal (as shown in FIG. 11, for instance), the second pole being magnetically connected with the back gap (as shown

in FIG. 11, for instance) and being separated from the pedestal by the write gap material (as shown in FIG. 11, for instance) [as per claim 6].

11. Claims 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Sasaki et al. (US 2005/0128639).

Sasaki et al. (US 2005/0128639) teaches a magnetic write head (FIG. 3, for instance) comprising a first magnetic write pole (211) having first and second ends; a first magnetic pedestal (214) formed over the first magnetic pole at the first end; a first magnetic back gap layer (216) formed over the first magnetic pole at the second end, the pedestal and the back gap having a distance therebetween (as shown in FIG. 3, for instance); a first material (24) formed over the pedestal, the first material being electrically conductive and non-magnetic (lines 3-4 in paragraph [0192] on page 9, for instance, i.e., "Ru" is electrically conductive and non-magnetic); a second material (217) formed over the back gap, the second material being electrically conductive and magnetic and being a different material than the first material (lines 7-9 in paragraph [0240] on page 12, for instance, "CoFe," for instance, is electrically conductive and magnetic and a different material than the first material, "Ru"); a second pedestal (222) formed over the first material layer over the first pedestal; a second back layer (218) formed over the second material layer over the back gap; and a magnetic pole (221) extending between and magnetically connecting the second pedestal and the second back gap layer (as shown in FIG. 3, for instance) [as per claim 7]; wherein the non-magnetic write gap material comprises less than 50% of an area of the head (as shown

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in FIG. 3, for instance, i.e., the non-magnetic write gap material is less than 50% of a cross-sectional area of the head) [as per claim 8]; and wherein the non-magnetic write gap material comprises less than 20% of the head (as shown in FIG. 3, for instance, i.e., the non-magnetic write gap material is less than 20% of the head in cross section) [as per claim 9].

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (US 6,353,995).

Sasaki et al. (US 6,353,995) teaches the magnetic write head as detailed in paragraph 9, supra. Sasaki et al. (US 6,353,995), however, remains silent as to the write gap material being "Rh."

Official notice is taken of the fact that Rh is a notoriously old and well known write gap material in the art. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the write gap material of Sasaki et al. (US 6,353,995) be Rh. The rationale is as follows:

One of ordinary skill in the art would have been motivated to have had the write gap material of Sasaki et al. (US 6,353,995) be Rh since such is a notoriously old and well known write gap material in the art, and since selecting a known material on the basis of its suitability for the intended use is within the level of ordinary skill in the art, *In re Leshin*, 125 USPQ 416 (CCPA 1960).

15. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (US 6,477,005).

Sasaki et al. (US 6,477,005) teaches a magnetic write head (FIG. 7A, for instance) comprising a first magnetic write pole (8a) having first and second ends; a first magnetic pedestal (8b) formed over the first magnetic pole at the first end; a first magnetic back gap layer (8c) formed over the first magnetic pole at the second end, the pedestal and the back gap having a distance therebetween (as shown in FIG. 7A, for instance); a first material (12) formed over the pedestal, the first material being non-magnetic (lines 44-47 in column 10, for instance, i.e., "DLC", for instance, is non-magnetic); a second material (8d) formed over the back gap, the second material being electrically conductive and magnetic and being a different material than the first material (lines 6-7 in column 10, for instance, i.e., "CoFe," for instance, is electrically conductive

and magnetic and a different material than the first material, "DLC"); a second pedestal (13a) formed over the first material layer over the first pedestal; a second back layer (13b) formed over the second material layer over the back gap; and a magnetic pole (13c) extending between and magnetically connecting the second pedestal and the second back gap layer (as shown in FIG. 7A, for instance) [as per claim 7]; wherein the non-magnetic write gap material comprises less than 50% of an area of the head (as shown in FIG. 7A, for instance, i.e., the non-magnetic write gap material is less than 50% of a cross-sectional area of the head) [as per claim 8]; and wherein the non-magnetic write gap material comprises less than 20% of the head (as shown in FIG. 7A, for instance, i.e., the non-magnetic write gap material is less than 20% of the head in cross section) [as per claim 9]. Sasaki et al. (US 6,477,005), however, remains silent as to the first material being "electrically conductive."

Sasaki et al. (US 6,477,005) does however teach that the first material is used as a "gap layer." Official notice is taken of the fact that electrically conductive materials, such as Ru and Rh, for instance, are notoriously old and well known gap layer materials in the art. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the first material, i.e., gap layer material, of Sasaki et al. (US 6,477,005) be electrically conductive. The rationale is as follows:

One of ordinary skill in the art would have been motivated to have had the first material, i.e., gap layer material, of Sasaki et al. (US 6,477,005) be electrically conductive since electrically conductive materials, such as Ru and Rh, for instance, are notoriously old and well known gap layer materials in the art, and since selecting a

known material on the basis of its suitability for the intended use is within the level of ordinary skill in the art. See *In re Leshin*, supra.

Pertinent Prior Art

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes Fujisawa et al. (US 5,473,491), Sasaki (US 6,278,580), Sasaki (US 6,317,288), Sasaki (US 6,738,232), Chen et al. (US 6,785,955), Lee (US 2003/0223150), Sato et al. (US 2004/0012884), Chen et al. (US 2004/0027716), Sato et al. (US 2004/0218306), and Lille et al. (US 2005/0068676), which each individually teaches a magnetic write head with a gap layer ending between a pedestal and a multi-layer back gap.

Allowable Subject Matter

17. Claims 2, 3, and 5, which depends on base claim 2, would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

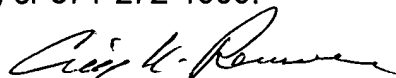
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (571) 272-

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7580. The examiner can normally be reached on Monday-Tuesday & Thursday-Friday 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Craig A. Renner
Primary Examiner
Art Unit 2627

CAR